

REMARKS/ARGUMENTS

Claim 1 is directed to a control apparatus for a vehicle, including a controller that causes a brake control system to control a braking force of a wheel brake of the vehicle such that a predetermined deceleration is established upon a coast downshifting of the transmission during running of the vehicle in a coast state in which the throttle valve of the engine is substantially closed. Method Claim 7 similarly recites a step of causing the brake control system to control the braking force of a wheel brake such that a predetermined deceleration is established upon a coast downshifting of the automatic transmission during running of the vehicle in a coast state where the throttle valve of the engine is substantially fully closed. For example, referring to the non-limiting embodiment of Figure 8, in the case of a manual shift (step S4) during coast conditions, the wheel brakes are controlled at steps S5-S6 to offset the engine braking produced by the manual shift (paragraphs [0035]-[0036]). In the non-limiting embodiment of Figure 9, the deceleration during a coast downshift is compared to a target deceleration (step R3), and the resulting comparison is used to control the wheel brakes at steps R4-R5 (paragraph [0039]-[0040]). In each case, the wheel brakes are controlled to provide a predetermined deceleration upon a coast downshift so that shift shocks due to the downshift or changes in engine braking force due to variations in the engine inertia resulting from a coast downshift are minimized.

Claims 1, 4, 5, 7, 9 and 10 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. patent 6,353,787 (Nishiyama). However, it is respectfully submitted that the claims clearly define over this reference.

Nishiyama is directed to a vehicle deceleration control method and apparatus. The Examiner had specifically relied upon the description related to Figure 6 of this reference. In fact, Figure 6 of Nishiyama discloses controlling the engine braking force according to a shift

position of the automatic transmission, and not such that a predetermined deceleration is established upon a coast downshift of the transmission.

Nishiyama discloses a deceleration control unit 100 that controls the wheel brakes, and also communicates with the automatic transmission control unit (col. 4, lines 58-67). Thus it controls the engine braking to be different when the shift lever is in the M position as compared to when the shift lever is in the D position (“The deceleration control apparatus according to the invention actively conducts the engine brake assist control in the M range so as to apply the engine brake effect according to the shift position more actively than in the D range”; col. 7, lines 30-33).

Fig. 6 of Nishiyama illustrates the control for adjusting the distance to a preceding vehicle on an expressway. In this case, the deceleration of the vehicle is conducted according to the position of the shift lever 56 and using *only* engine braking (col. 6, lines 40-53). When the driver lifts off the accelerator, the deceleration control unit 100 reads positional information of the shift lever to determine whether the shift lever is in the D range or the M range (col. 6, lines 54-61). If the shift lever 56 is in the D range, only normal engine braking is provided. However, if the shift lever is in, or switched to, the M range, engine brake system control is conducted (step S16) to apply a deceleration larger than that of normal engine braking. In this case the vehicle speed is reduced and the distance to a preceding vehicle can be increased (col. 7, lines 6-13). If the separation distance to the preceding vehicle is still insufficient, and the transmission is then downshifted at step S18, the vehicle deceleration is further increased (step S19).

Accordingly, Nishiyama does not anticipate the claims. While Nishiyama discloses a wheel brake system controlled by the deceleration control unit 100, it does not disclose a brake control system to control the braking force of a *wheel* brake such that a predetermined deceleration is established upon a coast downshifting of a transmission. Rather, Figure 6 of

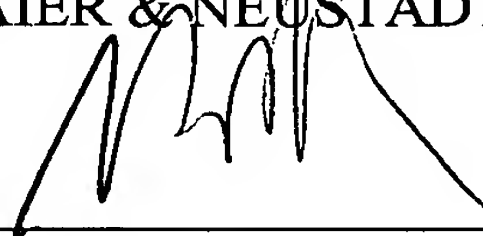
Nishiyama is limited to controlling the *engine* braking differently when the shift lever is in the M position as compared to when the shift lever is in the D position (col. 7, lines 30-33). Additionally, switching between the D and M positions of the shift lever 56 in Nishiyama is not a coast downshift and has nothing to do with establishing a predetermined deceleration upon a coast downshift. Finally, while it is true that the vehicle deceleration will increase at step S19 due to engine braking resulting from the downshift at step S18, the increased deceleration at step S19 is not a *predetermined* deceleration resulting from the control of the braking force of a *wheel* brake. Thus, Nishiyama does not anticipate any of the rejected claims.

Moreover, while the outstanding rejection was based upon anticipation and not obviousness, Applicants note that the claimed subject matter would not have been obvious from Nishiyama. The claimed invention controls the braking force of a wheel brake such that a predetermined deceleration is established upon a coast downshifting of the automatic transmission during the running of the vehicle in a coast state. Since the controller controls the brake control system to control the braking force of the wheel brake such that a predetermined deceleration is established, shift shocks which would otherwise occur during a coast downshift are minimized. In addition, changes in engine braking force due to variations in the engine inertia resulting from a coast downshift are minimized. In contrast, the deceleration of Fig. 6 in Nishiyama is directed to maintaining a sufficient distance to the preceding vehicle and does not control the deceleration to be a *predetermined* deceleration upon a coast downshift. Thus it would not reduce a shift shock due to a coast downshift or other factors. The claims therefore clearly define over this reference.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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